

July 14, 1931.

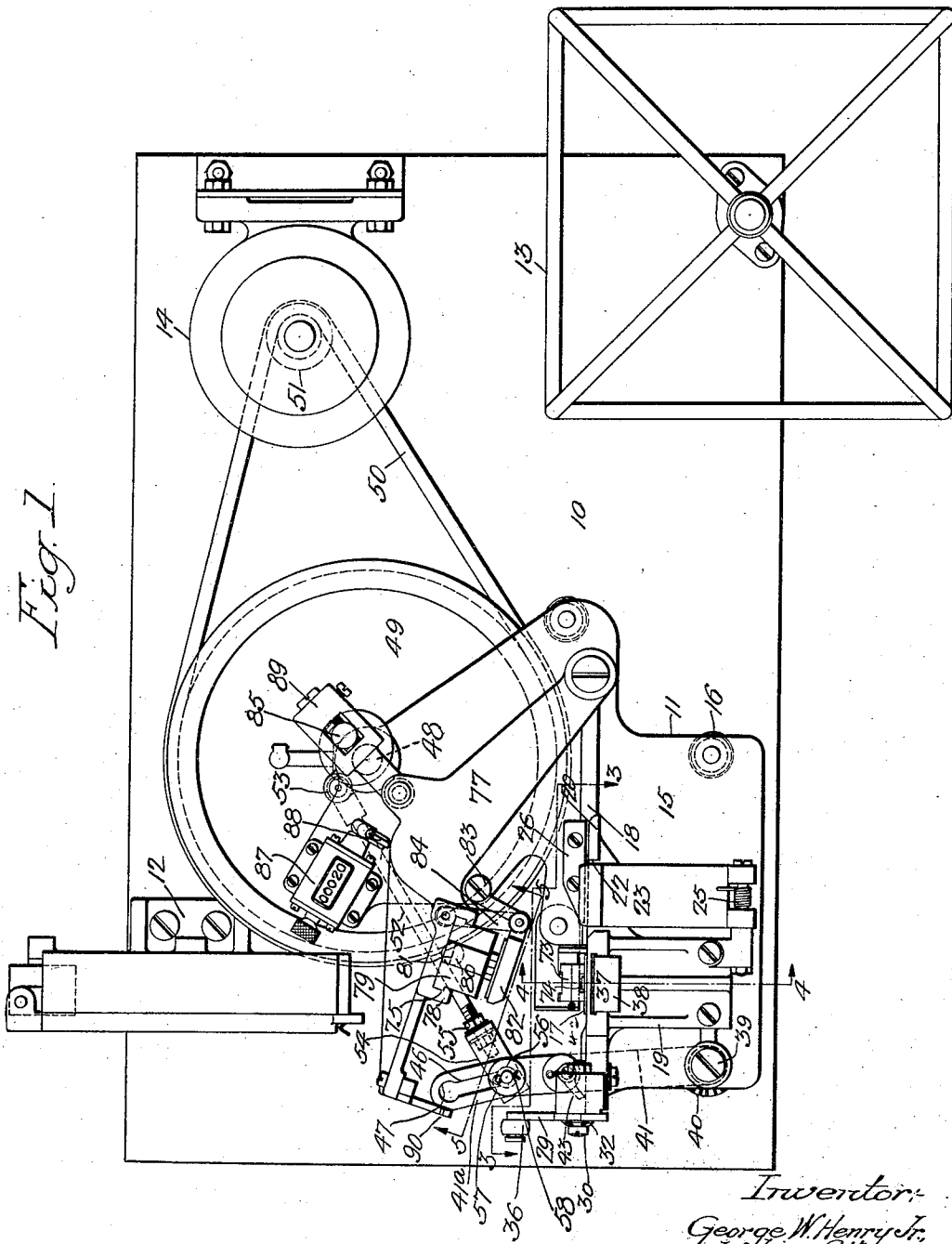
G. W. HENRY, JR

1,814,923

TAG PRINTING MACHINE

Filed June 6, 1929

4 Sheets-Sheet 1



Inventor:  
George W. Henry Jr.  
by his Attorney  
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July 14, 1931.

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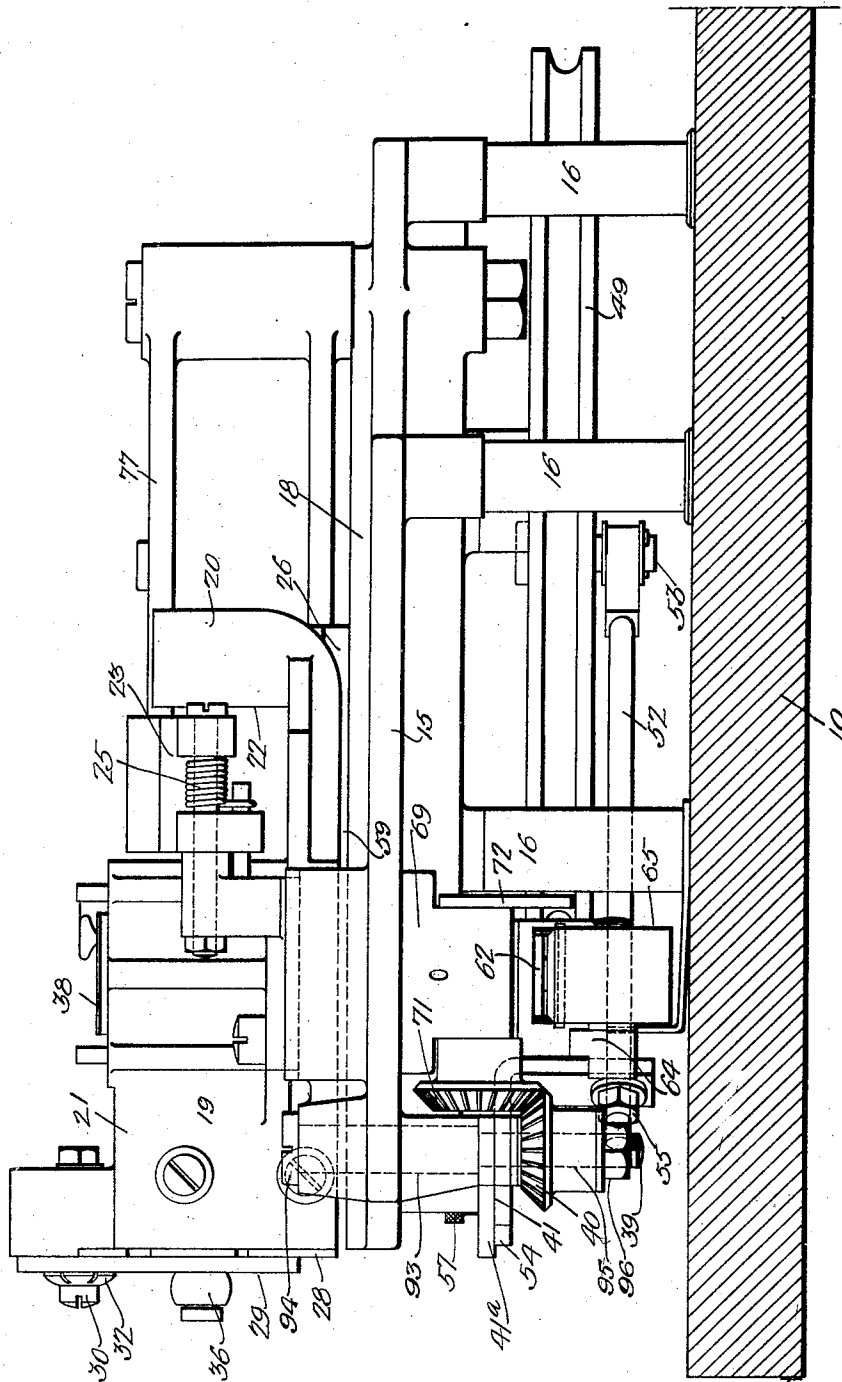
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4 Sheets-Sheet 2

Fig. 2.



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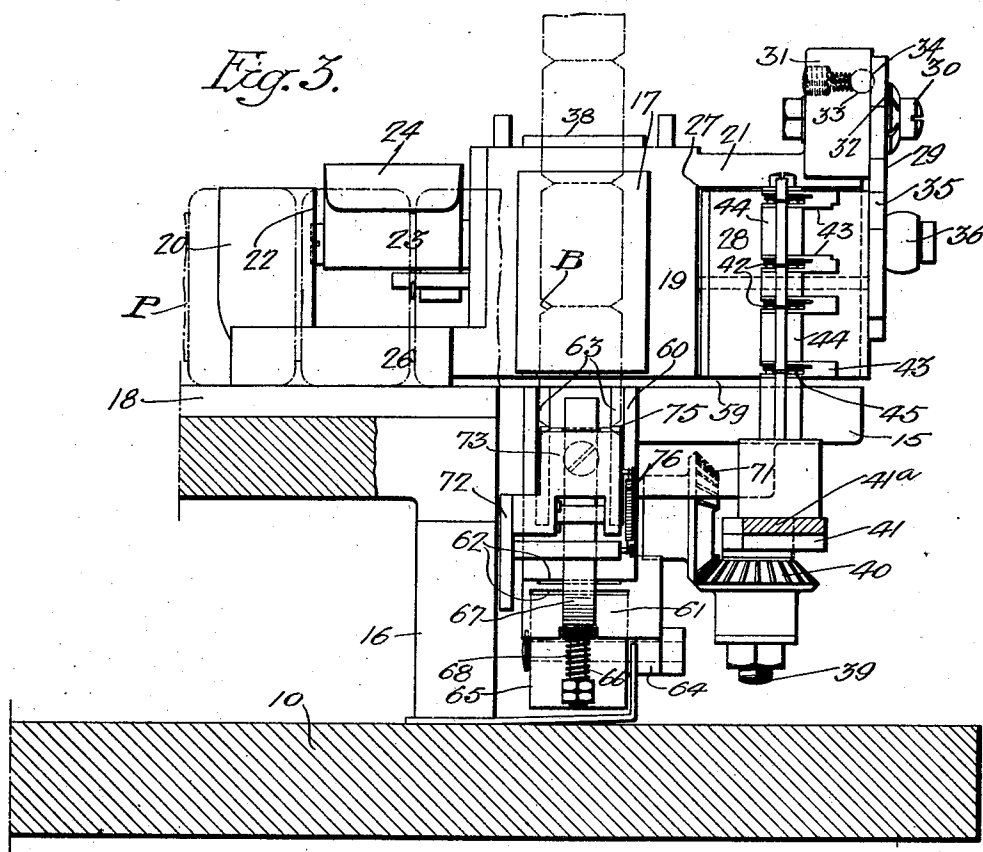
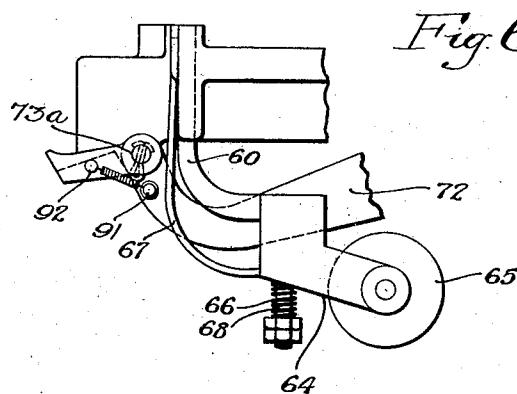
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TAG PRINTING MACHINE

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4 Sheets-Sheet 3



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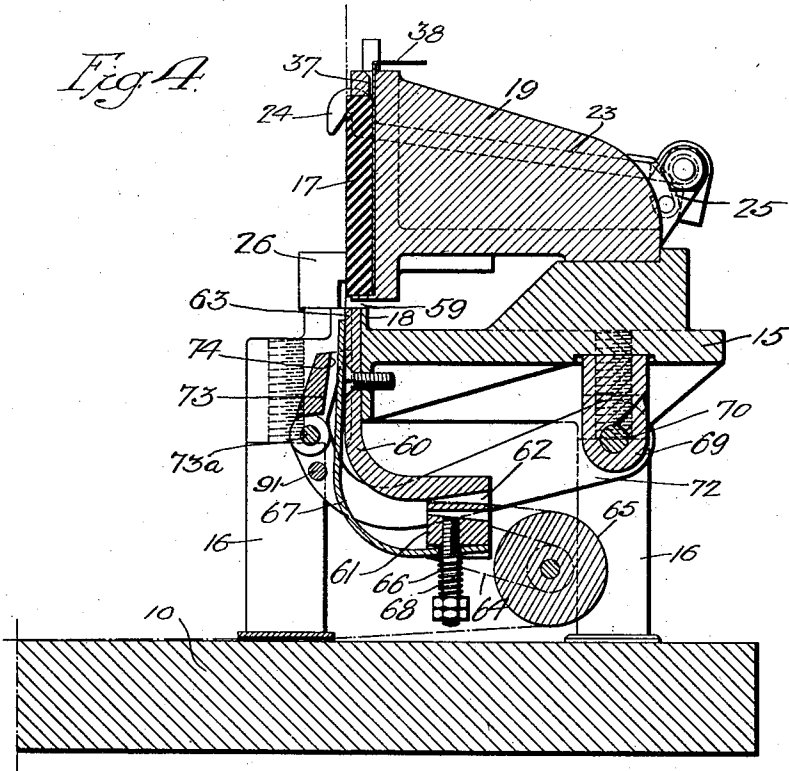
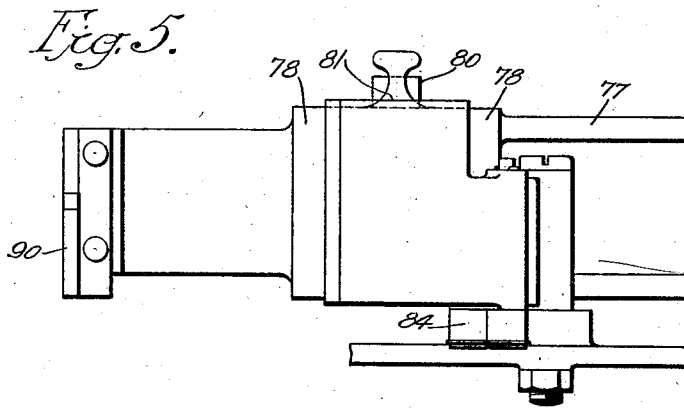
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**1,814,923**

TAG PRINTING MACHINE

Filed June 6, 1929

4 Sheets-Sheet 4



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## UNITED STATES PATENT OFFICE

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## TAG PRINTING MACHINE

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This invention relates to tag-printing machines and, more particularly, to an apparatus of this character which may be employed in printing both gummed labels and pin or string tags fed to the machine from a roll.

An important object of the invention is to produce in a construction of this character an arrangement such that the feeding mechanism is simplified and the number of elements therein reduced to a point rendering mechanical difficulties extremely unlikely.

A further object of the invention is the provision in apparatus of this character of a structure permitting several different sizes of gummed labels or pin or string tags to be printed in the same machine.

A further object of the invention is the provision of a novel feeding and tensioning mechanism for use in apparatus of this character, insuring the proper positioning of the tags with relation to the chase and platen of printing mechanism and manipulating the tags through engagement with the notched corners with which such tags are usually provided.

A still further object of the invention is to provide a novel and improved chase mounting providing adjustment of the chase for use with different tags and permitting regulation of the throw of the chase and, accordingly, the extent with which the type engages the tags.

These and other objects, I attain by the construction shown in the accompanying drawings wherein, for the purpose of illustration, I have shown a preferred embodiment of my invention and wherein:

Fig. 1 is a plan view of a tag-printing machine constructed in accordance with my invention;

Fig. 2 is a side elevation of the printing and feeding mechanism;

Fig. 3 is a section on line 3—3 of Fig. 1;

Fig. 4 is a section on line 4—4 of Fig. 1;

Fig. 5 is a section on line 5—5 of Fig. 1; and

Fig. 6 is a fragmentary detail view of the gum tag feeding mechanism illustrating the disposition of the pawl element thereof to

permit operation of the feeder without actual feeding of the tags.

Referring now more particularly to the drawings, the numeral 10 indicates a suitable support upon which are arranged feeding and printing mechanism generally designated at 11, magazines 12 and 13 adapted for the reception of gum tags and pin or string tickets, respectively, and a motor 14 for driving the feeding and printing mechanism.

The feeding and printing mechanism includes a base 15 supported in spaced relation to the support by standards 16. This base supports a platen 17 which is vertically disposed and overlies the base in spaced relation thereto. Projecting upwardly from the base is a rib 18 which aligns with the face of the platen and is adapted to act as a support for pin or string tickets P fed thereto. The platen 17 is mounted in a supporting bracket 19 which has wings 20 and 21 extending to opposite sides thereof and affording vertical faces overlying the rib 18.

The wing 20, which lies between the platen and the pin-tag magazine 13 is vertically notched as at 22, and pivoted upon the bracket 19 in spaced relation to this wing is an arm 23, the free end of which operates in and through the notch and has a hooked terminal 24. This arm is constantly urged downwardly at its free end by a spring 25 operating between the arm and the bracket and serves to constantly force the tag string passing therethrough downwardly against the upper surface of the rib 18. Co-acting with the wing 20 and confronting the same in spaced relation thereto is a guide block 26 which serves to prevent escape of the lower edges of the tags from the upper surface of the rib.

The wing 21 is notched or recessed, as at 27, for the reception of a combined wear and shear plate 28, the face of which is coplanar with the tag-receiving face of the wing. This wear plate has its outer edge, or that edge remote from the platen 17, formed as one element of a pair of shears, the second element of which comprises a blade 29 pivoted to the outer upper end of the wing, as indi-

cated at 30. The wing is provided with a boss 31 for the reception of the pivot 30 and a spring 32 constantly urges blade 29 into engagement with the end face of this boss.

5 Within the boss is mounted a spring-pressed detent in the form of a ball 33 and the inner face of blade 29 is provided with concave recesses 34 for the reception of this ball. These recesses are two in number and the ball en-  
10 gages in one thereof when the blade extends inwardly and downwardly from the face of wing 21 and in the other thereof when the blade extends outwardly and downwardly from this face. The rear edge of the blade  
15 is notched, as indicated at 35 and the outer face of the blade has mounted thereon a projecting roller 36, for purposes hereinafter to appear.

20 Platen 17, which may conveniently consist of a block of rubber, is mounted in a recess formed in the front face of the bracket 19 and the upper surface of this bracket is formed with a slot 37, through which a re-  
movable shim-piece 38 may be inserted be-  
25 tween the inner face of the platen and the bracket 19, adjusting the face of the platen outwardly.

Vertically journaled in the base is a shaft 39 having secured thereto a beveled gear 40  
30 and an arm 41. The arm 41 projects beneath the wing 21 and is provided with a vertically-extending post 42 which extends upwardly in fairly close relation to the inner face of the plate 28. Carried by this arm are a plu-  
35 rality of feeding dogs 43, these dogs being provided in any desired number and being spaced through spacers 44 in such manner that they will align with the notches of different sized pin or string tags P which are  
40 to be employed in the machine. Springs 45 constantly urge these dogs into engagement with the plate 28. Arm extension 41—a of the free end of the arm 41 is longitudinally slotted, as indicated at 46, this slot being  
45 provided with a plurality of longitudinally-spaced enlargements 47.

A shaft 48 is vertically journaled through the base and beneath the base has secured thereto a pulley 49 connected by a belt 50 to  
50 a pulley 51 upon the armature shaft or motor 14. A pitman 52 is eccentrically connected to the pulley 49, as indicated at 53, and has at its free end a bracket element 54 which, through stop and lock nuts designat-  
55 ed at 55, may be secured in longitudinally adjusted positions upon the pitman proper and thus serve to effectually vary the length of the pitman. One arm of this bracket has a  
lug 56 interchangeably engageable in the en-  
60 largements of the groove 46 and maintained against displacement therefrom through a nut 57 mounted upon a stud 58 carried by the lug.

It will be obvious that as the pulley 49 is  
65 rotated, the arm 41 will be oscillated and

that the oscillation which is imparted to this arm may be regulated to vary the length of the stroke. The actual position of the stroke may be also determined by an adjustment of the bracket 54. This latter feature is im-  
70 portant in that it admits of regulation of the position of the edges of the tags and, accordingly, permits these tags to be accurately cut by the blade 29. The tags which are  
75 fed from the magazine 13 are placed between the guide block 26 and wing 21 with the spring-pressed arm 23 bearing upon the upper surface thereof and must be manually  
80 passed over the face of the platen to a point where they may be engaged by the dogs 43. Arm 23 not only serves to insure proper alignment of the tags vertically but also serves to provide a resistance to longi-  
tudinal movement thereof, insuring against  
85 buckling or displacement of the tag when positioned against the face of the platen. The pins or strings of tags fed in this manner are extended in the slot 59 provided between the lower ends of wings 20, 21 and the platen  
90 bracket and the upper surface of the rib 18.

Immediately beneath the platen, the edge of base 15, which is defined at this point by the rib 18, is notched for the reception of a  
guiding horn 60 secured to the base by any  
95 suitable means such as a screw. The lower end of this horn extends beneath the base and is formed with a thickened portion 61 through which slots 62 of different widths  
100 are formed for the passage of gummed tags of different sizes. The outer face of the horn is smooth and rounded so that tags may slide readily thereover with the exception of the  
upper vertically-directed portion thereof, which is provided with a pair of parallel  
105 grooves 63 extending vertically thereon. Supported from the horn through an arm 64 is a roller 65 over which the labels pass to the proper opening 62, the horn and platen.  
The enlargement 61 has mounted therein a  
110 stud 66 upon which is mounted a pressure finger 67, the free terminal of which abuts the face of the vertically-extending portion of the horn and is yieldably maintained in  
engagement therewith by spring 68, the ten-  
115 sion of which may be adjusted, as more clearly shown in Fig. 4.

In the under surface of the base, a horizontal bearing 69 is provided, upon which is  
120 mounted a rock shaft 70, one end of which has a gear 71 meshing with the gear 40 and the opposite end of which has secured there-  
to an arm 72. Pivotaly supported upon the  
end of this arm, which operates adjacent the  
inner face of horn 60 and tensioning finger  
125 67, is a feeding dog 73, the base of which is centrally grooved, as at 74, to provide clear-  
ance for the tensioning finger and to form  
spaced gripping fingers 75 adapted to ex-  
tend through notches B in the edges of a tag  
strip and project into the vertical grooves 63  
130

of the horn 60. A spring 76, connecting the arm and feeding dog 73, constantly urges the upper end of this dog into engagement with horn 60.

When gum tags are to be printed, they are fed from the magazine 12 over roller 65 through a slot 62 and about the face of horn 60 to the platen 17. The tensioning finger may be depressed by inserting fingers at the loop or bend thereof and forcing this bend downwardly, so that this strip may readily pass to a point where it may be engaged by the fingers and drawn upwardly sufficiently to insure engagement of the dog 73 therewith. It will be obvious that when pulley 49 is rotated and arm 41 accordingly oscillated, this oscillation through the gears 40 and 71 will cause shaft 70 to rock, resulting in an oscillation of arm 72 and the consequent vertical reciprocation of the feeding pawl 73, so that the tags are fed vertically over face of platen 17.

It will be noted that by the construction illustrated, the feeding mechanisms will not in any way interfere with one another and a single actuating mechanism serves to operate both the feeders. Thus, the adjustments, provided by bracket 54 and by the connection of the pitman 52 to the arm 41a, serve for adjustment of both feeding mechanisms, resulting in a material simplification of the structure.

Pivoted for horizontal swinging movement upon the base in substantial alignment with the wing 21 is a chase support 77, having a vertically-extending guide 78 for the reception of the chase 79. The chase 79 has associated therewith a rotatable stop element 80 which overhangs the upper edge of one wall of the guide and serves to limit downward movement of the chase therein. This rotatable element 80 is notched in its under surface, as at 81 and, by aligning this notch with the guide edge, a corresponding lowering of the chase may be had, so that this chase may be disposed in either of two vertically-spaced positions. Means for inking the type carried by the chase comprise an inking pad 82 having an angular arm 83 which is pivoted to the base 15. A link 84 connects this arm and the chase support 77. The chase support 77 is connected to a crank 85 provided on the shaft 48 by a link 89 which is adjustable as to length, so that the pressure with which the type of the chase engages against the tags imposed upon the platen may be regulated. The crank 85 is retarded through approximately 90° with relation to the pivot 53 and the feeder-actuating mechanism pitman 52, so that there is no movement of the tags during the period when the type is in engagement therewith. A counter 87 is preferably supported from the base and so positioned that its actuating arm 88 is

contacted by chase support in its oscillation.

The free end of the chase support provides a means for actuating blade 29. In the present instance, this support is illustrated as provided with a hooked finger 90. The face of the support engages against the roller 36 carried by the blade when this blade is positioned to incline inwardly and downwardly and forces the blade before it to provide the necessary shearing action. The downward swinging movement of the blade positions this arm against the inner face of the hook 90 with the result that, as the chase support recedes from wing 21, the blade is again swung to its outwardly and downwardly inclining position final movement of the blade to this position being accomplished by the pressure of ball 33 against the walls of the socket 34, so that the blade is swung to a position where it fully clears the hook and there is no danger of improper contact therewith.

In use of the apparatus, the gum tags or pin or string tags are placed in position to properly engage with the feeding mechanism thereof. The machine may then be actuated by hand to advance the tags and proper adjustments made until the tag properly aligns with the platen and with the knife, if pin or string tags are being fed. After these adjustments have been secured, the motor 14 may be started and operation continued until the desired number of tags have been printed.

In order that it will not be necessary to thread the gum tags from magazine 12 through the several guides each time that the machine is to be used for printing such tags, the spring 76 which connects the arm 72 and the feeding pawl 73 is so connected thereto that the feeding pawl may be swung about its pivot 73—a upon the outer end of this arm to positions where the spring will either act to force the feeding pawl into engagement with the support over which the tags are being fed or hold it in a downwardly and outwardly inclining position as indicated in Fig. 6. In other words, the pins 91 and 92 to which the ends of this spring are connected are shifted from one side to the other of the pivot 73—a.

In order that the relative positions of arms 72 and 41 may be relatively adjusted the shaft 39 upon which arm 41 and gear 40 are mounted is in the form of a pillar shaft having a main body portion 93 upon the upper end of which there is a head 94 and upon the lower end of which there is a reduced extension 95. Between the shoulder, produced at the junction of the main body and the extension 96, and a nut 96 mounted upon the lower end of the shaft arm 41 and gear 40 are clamped and it will be obvious that by loosening this nut arm 72 may be shifted with relation to arm 41. This permits a further adjustment of the relative positions of the pawl element 73 and pawls 43 insuring the possibility of ac-

curate alignment of both sets of tags with the platen.

The construction illustrated is obviously capable of a considerable range of change and modification without in any manner departing from the spirit of my invention and I, accordingly, do not limit myself to such structure except as hereinafter claimed.

I claim:

1. In tag-printing mechanism, a platen, supports over which the tag strips fed to the platen in different directions pass, a reciprocating pawl mechanism adapted to operate over each support and engaging the strip passing thereover to advance the same, and a common operating means for said pawl mechanisms adjustable to simultaneously vary the positions of the strokes thereof.

2. In a tag-printing mechanism, a platen, a support over which the tag strip fed to the platen passes, a reciprocating pawl mechanism adapted to operate over the support and engaging the strip to advance the same, and operating means for said pawl mechanism adjustable to vary the length and position of the stroke thereof.

3. In tag-printing mechanism, a platen, a support over which a tag strip fed to the platen passes, a reciprocating pawl mechanism adapted to operate over this support and engaging the strip to advance the same, a rotatable member, an oscillating arm with which said pawl mechanism is operatively connected, and a pitman adjustable as to length connecting said rotatable member and said oscillating arm.

4. In tag-printing mechanism, a platen, a support over which a tag strip fed to the platen passes, a reciprocating pawl mechanism adapted to operate over this support and engaging the strip to advance the same, a rotatable member, an oscillating arm with which said pawl mechanism is operatively connected, and a pitman adjustable as to length connecting said rotatable member and said oscillating arm, the connection between the pitman and arm being adjustable longitudinally of the arm.

5. In tag-printing mechanism, a platen, a support over which a tag strip fed to the platen passes, a reciprocating pawl mechanism adapted to operate over this support and engaging the strip to advance the same, a rotatable member, an oscillating arm from which said pawl mechanism is directly supported, and a pitman adjustable as to length connecting said rotatable member and said oscillating arm, the connection between the pitman and arm being adjustable longitudinally of the arm.

6. In tag-printing mechanism, a platen, a support over which a tag strip fed to the platen passes, a reciprocating pawl mechanism adapted to operate over the support and engaging the strip to advance the same,

a rotatable member, an oscillatable arm operatively connected to the pawl mechanism to reciprocate the same, and a pitman connecting said oscillating arm and rotatable member and adjustably connected to one thereof to permit variation of the extent through which the arm is oscillated.

7. In tag-printing mechanism, a platen, a support over which a tag strip fed to the platen passes, a reciprocating pawl mechanism adapted to operate over the support and engaging the strip to advance the same, a rotatable member, an oscillatable arm operatively connected to the pawl mechanism to reciprocate the same, a pitman connecting said oscillating arm and rotatable member and adjustably connected to one thereof to permit variation of the extent through which the arm is oscillated, said pawl mechanism including spaced pawl elements, and a rod rigidly supported from the arm and having its axis parallel to the support upon which said pawls are mounted.

8. In tag-printing mechanism, a platen, a pair of supports arranged at adjacent sides of said platen, pawl mechanism cooperating with each support and adapted to engage a tag strip passed over the associated support and advance the same to thereby shift the tags over the platen, and a common operating mechanism for said pawl mechanisms adjustable to simultaneously vary the lengths of the strokes thereof.

9. In tag-printing mechanism, a platen, a pair of supports arranged at adjacent sides of said platen, pawl mechanism cooperating with each support and adapted to engage a tag strip passed over the associated support and advance the same to thereby shift the tags over the platen, and a common operating mechanism for said pawl mechanisms adjustable to simultaneously vary the position of the strokes thereof.

10. In tag-printing mechanism, a platen, a pair of supports arranged at adjacent sides of said platen, pawl mechanism cooperating with each support and adapted to engage a tag strip passed over the associated support and advance the same to thereby shift the tags over the platen, and a common operating mechanism for said pawl mechanisms adjustable to simultaneously vary the lengths and positions of the strokes thereof.

11. In tag-printing mechanism, a platen, a pair of supports arranged at adjacent sides of said platen, pawl mechanism cooperating with each support and adapted to engage a tag strip passed over the associated support and advance the same to thereby shift the tags over the platen, and a common operating mechanism for said pawl mechanisms adjustable to simultaneously vary the lengths of the strokes thereof comprising an oscillating arm operatively connected to each of said pawl mechanisms, a rotating element,

and a pitman connecting said rotating element and oscillating arm and adjustable as to length.

12. In tag-printing mechanism, a platen, a pair of supports arranged at adjacent sides of each platen, pawl mechanism cooperating with each support and adapted to engage a tag strip passed over the associated support and advance the same to thereby shift the tags over the platen, a common operating mechanism for said pawl mechanisms adjustable to simultaneously vary the lengths of the strokes thereof, comprising an oscillating arm operatively connected to each of said pawl mechanisms, a rotating element, and a pitman connecting said rotating element and oscillating arm and adjustable as to length, the connection between said pitman and arm being adjustable longitudinally of the arm.

13. In tag-printing mechanism, a platen, a pair of supports arranged at adjacent sides of said platen, pawl mechanism cooperating with each support and adapted to engage a tag strip passed over the associated support and advance the same to thereby shift the tags over the platen, and a common operating mechanism for said pawl mechanisms adjustable to simultaneously vary the lengths of the strokes thereof including an oscillating arm, a rotatable member, and a pitman connecting the rotatable member and oscillating arm and adjustable longitudinally of the arm.

14. In tag-printing mechanism, a platen, a pair of supports arranged at adjacent sides of said platen, pawl mechanism cooperating with each support and adapted to engage a tag strip passed over the associated support and advance the same to thereby shift the tags over the plates, and a common operating mechanism for said pawl mechanisms adjustable to simultaneously vary the lengths of the strokes thereof including an oscillatable arm upon which one of said pawl mechanisms is directly supported and to which the other of the pawl mechanisms is operatively connected.

15. In tag-printing mechanism, a platen, feeding means for shifting a tag strip thereacross in one direction, a second feeding means for shifting a tag strip thereacross in a different direction, connections between said feeding means whereby operation of either of said feeding means causes operation of the other thereof, an operating means, and connections between said operating means and one of said feeding means adjustable to vary the distance through which the tag strip is shifted at each operation of said feeding means.

16. In a pin or string tag printing machine, a platen, a seat for the edge of the tag strip fed to the platen, said seat extending adjacent the platen and to opposite sides thereof, means at one side of the platen for yieldably forcing the strip into engagement with said seat and means at the opposite side of the

platen for shifting the tag strip over the platen.

17. In a tag printing machine a platen, means for shifting a tag strip over the platen adjustable to vary the distance through which the strip is shifted and to vary the position of the individual tags of the strip with relation to the platen, a chase, a mounting therefor, means for moving the chase into and out of engagement with the platen and means for adjusting the chase with relation to the platen.

18. In tag-printing mechanism, a platen, feeding means for shifting a tag strip thereacross in one direction, a second feeding means for shifting a tag strip thereacross in a different direction, connections between said feeding means whereby operation of either of said feeding means causes operation of the other thereof, and means for permitting adjustment of the relative positions of said feeding means.

19. In tag-printing mechanism, a platen, feeding means for shifting a tag strip thereacross in one direction, a second feeding means for shifting a tag strip thereacross in a different direction, connections between said feeding means whereby operation of either of said feeding means causes operation of the other thereof, one of said feeding means comprising a pawl, a support over which the pawl operates a member for reciprocating the pawl over the support, the connection between said member and pawl permitting movement of the pawl toward and away from said support and a single spring connecting said member and pawl for urging said pawl toward the support or for holding said pawl out of engagement therewith.

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